5. The applicant collected and analyzed 16 samples in the proposed dredge area. For an approximate four million cubic yard dredging project, this equates to one sample for every 250,000 cubic yards of dredge material. Although there is no national guidance available to address the number of samples to collect for a dredging project, this is less than is typical for dredging contaminated sediment. In addition, the proposed dredging area has shifted to the north where no sediment samples were taken and analyzed. The application states that the applicant will perform additional sampling and characterization of the sediment in the proposed dredge area, as required, in accordance with the Corps permit application requirements, to further characterize the levels of contamination. In this regard, the permit application clearly recognizes that additional sampling may be required as the application is reviewed by the regulatory agencies.

After careful consideration and review, the Corps, in coordination with the US Environmental Protection Agency, has determined that additional sediment sampling in the proposed dredge area is required to adequately characterize the level of contamination present in the sediments. The additional required sampling should be comprised of four segments: outer approach channel, turning basin, north side of Pier 1, south side of Pier 1. For each segment, there should be a minimum of three separate sampling locations all selected using a random design. At each selected location for sampling, the core boring must be a minimum of one meter deeper than the proposed dredge project depth (to account for any over dredging). Analysis of surface, mid-depth, and bottom of the core should be made for bulk chemistry (as was performed for the previous 16 samples). Separate analysis of the elutriate concentrations (no sample pooling or compositing) for surface and mid-depth of each core is required. Cores or borings should be done (at least one per segment) for physical characterization down to the dredge project depth plus one meter. Emphasis should be placed on characterizing any strata anomalies. If strata anomalies exist, additional testing should be done in the anomaly area. The Corps and EPA are available to discuss/meet with the applicant regarding these additional sampling locations and requirements, if necessary.

AES RESPONSE: AES respectfully disagrees with the ACOE that additional sampling is needed to adequately characterize the level of contamination present in the sediment to be dredged. AES firmly believes adequate sample data is available. Specifically, AES has presented larger sample data sets, with better depth discrimination, and more in-depth analysis with respect to sediment characteristics across the Port of Baltimore than has been used by the ACOE for permitting other projects, particularly at this specific location. AES provides a more detailed response in this regard below, but has also generated a *pro forma* sample program consistent with the ACOE request for discussion at a planned meeting with ACOE and other agencies on August 1, 2007.

While no national guidance is available to address the number of samples to collect for a dredging project of this nature, AES referred to the Department of the Army permit titled "CENAB-OP-RMN (BWI-SPARROWS POINT LLC/BULKHEAD & DREDGING) 04-64865-1," dated 06 May 2005 (06 May 2005 ACOE Permit) to determine the degree of

sampling required for projects in the immediate vicinity of the proposed AES Project. The project description in the approved 06 May 2005 COE Permit states:

> *"To hydraulically or mechanically dredge a channel, turning basin, and berthing areas to 39 ft below mean low water, and to place approximately 600,000 cubic yards of dredged material at the Hart Miller Island disposal site; under subsequent phases, to deposit approximately 2.6 million cubic yards of dredged material at disposal sites yet to be determined;…"*

The sediment sampling performed by GZA in July 2004 for the CENAB-OP-RMN(BWI-SPARROWS POINT LLC/BULKHEAD & DREDGING)04-64865-1 permit application included three composite samples, with each composite sample consisting of sediment collected from three different core locations; nine core locations total. As broken down on Attachment ACOE 5 Table 1 to this document, the May 6, 2005 COE Permit issued to BWI approved the 3.2 million cubic yard ("CY") dredging project having one sample for every 1,066,667 CY of dredge material, distributed over an area comprising approximately 195 acres.

The analytical laboratory testing performed on the three BWI samples indicated that heavy metals were present; volatile organics, semi-volatile organics, and pesticides were not detected above the laboratory detection limits. No PCB analyses or elutriate testing was required to be performed. Further, the three samples analyzed for the 2005 permit were not collected with depth discrimination (i.e., the samples were composited from different depths and different borings to comprise one sample per group of three borings).

AES concluded itself that the extent of analyses performed for the 2005 permit could be expanded for its application to ACOE. This conclusion was not driven by adequacy for permitting; rather, it was driven more so by the level of interest from the public and agencies, as expressed at project and public meetings. Public comment posited a potential of vertical stratification of sediment quality; thus, AES chose to analyze samples from different depths in order to understand depth distribution. In addition, there was expressed interest in understanding the possible presence and concentration of compounds that may have been associated with the former shipyard usage; thus, tributyl tin and PCB analyses were added to the analyte list. Finally, elutriate testing was added in order to generate objective data to characterize potential effects on water quality during dredging. The results of the 15 locations cored by AES, 16 sediment samples analyzed, and elutriate testing were all compared to area data collected by various parties within the vicinity of the Project and found to be consistent with or better than sediment quality in this area of the port (the detailed data appears in Resource Report 2, *Water Use and Quality*, and in the Revised ACOE Permit Application dated April 2007). In addition, depth stratification was found to present with more contaminated sediment concentrated in the upper several feet of sediment, and sediments at depth being generally less contaminated or free of individual or categories of contaminants. These results were submitted to FERC and ACOE in AES's project documents: first in Pre-Filing draft submittals in the Fall of 2006; then in the formal filing in January 2007; and finally in the Revised ACOE Permit Application submitted in April 2007. These analyses result in one

sample for every 231,000 CY proposed to be dredged by AES (five times better sample-to-volume ratio than the 2005 permit issued to BWI), and distributed over 117 acres (nine times better area-to-sample ratio than the 2005 permit issued to BWI due to 40 percent less acreage to be dredged than was permitted to BWI). See ACOE 5 Figure 1 and Table 1 for a visual depiction of the areas approved to be dredged by BWI and proposed to be dredged by AES.

Finally, as indicated on the attached table, additional samples were collected by the Maryland Port Administration ("MPA") in late-2006 within the permitted BWI dredge area prior to performance of Phase I dredging by BWI. MPA collected four samples composited from 12 cored sample locations (again three core locations were composited for each individual sample submitted to the laboratory). These samples were analyzed for VOCs, SVOCs, metals, pesticides and PCBs, and water analyses were also performed. Again, the samples were not collected with depth discrimination. The results indicated detections of a wider variety of compounds, including organic compounds, than had originally been reported by BWI for its permit application; however, evaluation of the results by the MPA, summarized in an MPA memo dated November 7, 2006, concluded that the material to be dredged was consistent with sediment quality found elsewhere in the Port of Baltimore, and that dredging would not result in water quality impacts. These results have also been provided to the ACOE in the AES submittals listed above.

In total, therefore, there are a total of 23 sediment samples and four elutriate samples, all generated from 36 locations within and around the area proposed to be dredged by AES that provide data on sediment quality and potential for environmental impact that <u>may</u> result from performance of the proposed AES Project – all provided to the COE in the AES submittals. AES performed more sampling than had been completed for the prior permitted program at this location, with greater refinement and characterization relative to distribution and depth variation of sediment quality. A permit to dredge is being sought by AES for a smaller area in plan view than was permitted to BWI, and while dredge depth would be six feet deeper than that already permitted to BWI, the deeper dredge material is uniformly of better quality than the shallower material that BWI has been permitted to dredge (i.e., there are no detections or lower concentrations of detected compounds at depth), therefore the percentage of total dredge comprised of contaminated sediment is actually less than has already been permitted to BWI.

Despite these clear distinctions and greater amount of information available to ACOE compared to its past dredge permit issuance for this same area, and in order to provide a complete response, AES has developed a *pro forma* sampling program consistent with that prescribed in the ACOE Comment No. 5. <u>This sampling program is intended</u> <u>solely for purposes of discussion with the ACOE</u>. A meeting on this subject has been arranged for August 1, 2007 with ACOE, EPA, and FERC, at which the ACOE comment, the information contained herein and potential future direction can be discussed and future direction can be resolved. It is AES's position that the additional sampling program described below could be implemented prior to initiation of dredge activities when AES has identified the specific disposal alternatives most appropriate at the time of the dredge

activity. Further discussion of this point is provided below under the heading "Additional Sediment Sampling for Disposal Alternatives" and in the summary to this response.

For this prospective program, as requested by the ACOE and the EPA, AES divided the proposed dredge area into four segments:

- Outer approach channel,
- Turning basin,
- North side of Pier 1, and
- South side of Pier 1.

A 100 foot by 100 foot grid was overlaid on each of the four prescribed dredge segments. The ACOE comment directed that sample locations should be selected randomly within each segment. To accomplish this, potential sample locations (nodes) were identified at the center of each 100 foot square; each node in each segment was labeled with a unique node number. For each segment, three separate sampling locations were selected by using random number generation to identify the three node numbers within each segment that would comprise the randomly-selected sample locations. Attachment ACOE 5 Figure 1 shows the twelve randomly selected locations determined by this method. Note that, while the selection method was randomized, the locations that result from the method of selection prescribed by ACOE closely match areas already sampled by past sampling for 11 of the 12 samples. Only one randomly-generated sample node location would be in an area not previously sampled; the northern area of the turning basin where no previous sediment samples were collected.

Additional Sediment Sampling for Disposal Alternatives

In its Comment No. 5, the ACOE states "the permit application clearly recognizes that additional sampling may be required as the application is reviewed by the regulatory agencies." The ACOE's interpretation of a statement made by AES in its application is incorrect. What AES actually stated in its FERC filing was that additional sampling and characterization of the sediment in the proposed dredge area would be performed "[b]ased on the COE review of the permit application, if it is determined that additional sampling of dredge material is required for specific disposal alternatives, then the COE will be consulted at that time regarding the additional requirements for disposal of the dredge spoil." (emphasis added). AES does not believe that additional sampling and characterization for dredge *permitting* is needed based on the lengths to which AES went above and beyond sampling and characterization efforts for other dredge projects approved previously by the ACOE in the Port of Baltimore. AES's statement was intended to recognize that sampling in order to provide refinement of the recycle process would better enable AES to provide more specific data to inform agencies of the resulting dredge recycle products. The additional characterization immediately prior to the dredging and recycling activities would also benefit AES's contractor in its cost development for the recycling process.

Summary:

Given the information and descriptions provided above, AES would like to discuss with ACOE a modification of the timing for the sampling program requested in the ACOE comment letter; one that will help to generate a better understanding of the physical and chemical properties of the product to be generated by the recycling process prior to the initiation of dredging activities. AES believes this will better provide the agencies and AES's contractors with information needed for the recycling process while the sampling information already provided to the agencies is fully sufficient to process the permit application.